



Scott Point Drinking Water System

2023 Annual Water Summary Report

1. INTRODUCTION AND BACKGROUND

The municipality owns and operates drinking water systems to provide residents with safe, potable water. These municipal drinking water systems are regulated under various legislation and legal documents including the Safe Drinking Water Act and Ontario Regulation 170/03 Drinking Water Systems. O. Reg. 170 requires that the municipality complete an annual water report (Section 11) and an annual summary report (Schedule 22). The information required for each of these reports has been combined into this one report. This annual water summary report will be made available for inspection as per O. Reg. 170 subsection 12 (4).

The reports are available free of charge on the municipal website at www.kincardine.ca or by contacting the Environmental Services Department at waterservice@kincardine.ca. Requests will also be received in person or by telephone at the Municipal Administration Centre (1475 Concession 5, 519-396-3468) or the Environmental Services Office (155 Durham Street, Kincardine, 519-396-4660).

1.1. System Description

Drinking-Water System Number:	220007043
Drinking-Water System Name:	Scott Point Drinking Water System
Drinking-Water System Owner:	Municipality of Kincardine
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	Year 2023

The Scott Point Drinking Water System (DWS) is a non-GUDI well system (which means that it is a secure well and not under the influence of surface water) consisting of one well, with a capacity of 0.9 L/s. The treatment works consists of a raw water flow meter, sodium hypochlorite (NSF approved) for disinfection, an oxidation tank and two multi-media pressure filters for iron removal, a 45 m³ baffled reservoir and a treated water flow meter. There is on-line monitoring of treated water for free chlorine residual. Pressure for the distribution system is supplied by pressure storage tanks. Two high lift pumps supply water to the pressure tanks and distribution system as well as the backwash filters. The backwash wastewater is directed to a two-stage tank buried on municipal property. The water system serves less than 40 households. There is a backup generator on-site.

1.2. Major Expenses

The system incurred expenses necessary to install, repair or replace required equipment as follows:

Monitoring Equipment \$28,028.01

Treatment Upgrades \$63,545.26

2. WATER QUALITY MONITORING

Each municipal drinking water system is required to do testing to ensure that the water supplied to consumers is safe for consumption. Some of these tests such as chlorine residuals are done on site while others, like microbiological testing, must be performed by a licenced laboratory.

2.1. Microbiological Testing

O. Reg. 170 Schedule 11, requires the Scott Point DWS to take a minimum of one sample per month of raw water from the well, and one sample every two weeks of distribution water and have them tested for Escherichia coli (E. coli) and total coliforms (TC). The distribution samples must also be tested for heterotrophic plate count (HPC). Our internal sampling schedule exceeds the minimum requirements by having operations staff collect one treated and one distribution sample every week and have them tested for E. coli, total coliform and HPC.

Any E. coli or total coliform results above zero (0) in treated or distribution water must be reported to the Ministry of the Environment, Conservation and Parks (MECP) and Medical Officer of Health (MOH).

Heterotrophic plate count is a colony count of general bacteria population. There is no adverse limit for HPC samples. Results over 500 colonies per 1 mL may indicate a change in water quality but it is not considered an indicator of unsafe water.

The results from the 2023 sampling program are shown in the table below.

Water Source	Number of TC/EC Samples	Range of Total Coliform Results (#-#)	Range of E. coli Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	12	0 – 0	0 – 0	3	0 – 1
Treated	52	0 – 0	0 – 0	52	0 – 17
Distribution	52	0 – 0	0 – 0	52	0 – <10

2.2. Chemical Testing

The Safe Drinking Water Act Reg 170 Schedule 13 requires periodic testing of the water for chemical parameters. The Scott Point DWS is required to test for nitrite/nitrates on a quarterly basis. Until recently, trihalomethanes and haloacetic acids were tested quarterly but due to the low levels, they are now only required to be tested on a quarterly basis every third year. The tables below outline other inorganic and organic parameters that are required to be tested every five years and include the date and result of the most recent test. Any result displayed as less than (<) are below the method detection limit of the lab.

Sodium and fluoride levels exceed the Ontario Drinking Water Quality Standards, but they are naturally occurring in the groundwater and do not need to be tested more frequently than every five years.

If the concentration of a parameter is above half of the Maximum Acceptable Concentration (MAC) under the Ontario Drinking Water Quality Standards, an increased testing frequency of once every three months is required by O. Regulation 170. There were no parameters above the half MAC that were required to be tested for quarterly in 2023.

Inorganic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	July 10/23	<0.6	µg/L	No
Arsenic	July 10/23	<0.02	µg/L	No
Barium	July 10/23	8.23	µg/L	No
Boron	July 10/23	248	µg/L	No
Cadmium	July 10/23	< 0.003	µg/L	No
Chromium	July 10/23	0.30	µg/L	No
Mercury	July 10/23	< 0.01	µg/L	No
Selenium	July 10/23	< 0.04	µg/L	No
Sodium	October 12/22 October 18/22	37.2 33.3	mg/L	Yes
Uranium	July 10/23	0.230	µg/L	No
Fluoride	April 11/23 April 17/23	1.72 1.72	mg/L	Yes
Nitrite	January 9/23 April 11/23 July 10/23 October 10/23	< 0.003 0.004 0.004 < 0.003	mg/L	No
Nitrate	January 9/23 April 11/23 July 10/23 October 10/23	0.033 0.019 0.006 0.008	mg/L	No

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	July 10/23	< 0.02	µg/L	No
Atrazine + N-dealkylated metabolites	July 10/23	< 0.01	µg/L	No
Azinphos-methyl	July 10/23	< 0.05	µg/L	No
Benzene	July 10/23	< 0.32	µg/L	No
Benzo(a)pyrene	July 10/23	< 0.004	µg/L	No
Bromoxynil	July 10/23	< 0.33	µg/L	No
Carbaryl	July 10/23	< 0.05	µg/L	No
Carbofuran	July 10/23	< 0.01	µg/L	No
Carbon Tetrachloride	July 10/23	< 0.17	µg/L	No
Chlorpyrifos	July 10/23	< 0.02	µg/L	No
Diazinon	July 10/23	< 0.02	µg/L	No
Dicamba	July 10/23	< 0.20	µg/L	No
1,4-Dichlorobenzene	July 10/23	< 0.36	µg/L	No
1,2-Dichlorobenzene	July 10/23	< 0.41	µg/L	No
1,2-Dichloroethane	July 10/23	< 0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 10/23	< 0.33	µg/L	No
Dichloromethane	July 10/23	< 0.35	µg/L	No
2-4 Dichlorophenol	July 10/23	< 0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 10/23	< 0.19	µg/L	No
Diclofop-methyl	July 10/23	< 0.40	µg/L	No
Dimethoate	July 10/23	< 0.06	µg/L	No
Diquat	July 10/23	< 1	µg/L	No
Diuron	July 10/23	< 0.03	µg/L	No
Glyphosate	July 10/23	< 1	µg/L	No
Malathion	July 10/23	< 0.02	µg/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	July 10/23	<0.00012	µg/L	No
Metolachlor	July 10/23	< 0.01	µg/L	No
Metribuzin	July 10/23	< 0.02	µg/L	No
Monochlorobenzene	July 10/23	< 0.3	µg/L	No
Paraquat	July 10/23	< 1	µg/L	No
Pentachlorophenol	July 10/23	< 0.15	µg/L	No
Phorate	July 10/23	< 0.01	µg/L	No
Picloram	July 10/23	< 1	µg/L	No
Polychlorinated Biphenyls (PCB)	July 10/23	< 0.04	µg/L	No
Prometryne	July 10/23	< 0.03	µg/L	No
Simazine	July 10/23	< 0.01	µg/L	No
Terbufos	July 10/23	< 0.01	µg/L	No
Tetrachloroethylene	July 10/23	< 0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	July 10/23	< 0.20	µg/L	No
Triallate	July 10/23	< 0.01	µg/L	No
Trichloroethylene	July 10/23	< 0.44	µg/L	No
2,4,6-Trichlorophenol	July 10/23	< 0.25	µg/L	No
Trifluralin	July 10/23	< 0.02	µg/L	No
Vinyl Chloride	July 10/23	< 0.17	µg/L	No

Trihalomethane (THM) distribution sampling is required quarterly every third year and must also be expressed as a running annual average. The limit as set in the Ontario Drinking Water Quality Standards is 100 µg/L. Trihalomethanes are a by-product of the disinfection process. Trihalomethane sampling was not required in 2023.

Date Sampled	THM Result Value (µg/L)	Running Annual Average (µg/L)	Exceedance
January 11/21	14	14.0	No
April 26/21	13	13.5	No
July 12/21	16	14.3	No
October 18/21	19	15.5	No

Sampling and testing for haloacetic acids (HAA) in the distribution system is a new requirement as of 2017. They are also required quarterly every third year as long as the results are below the limit. The limit as set in the Ontario Drinking Water Quality Standards is 80 µg/L and starting in 2020 must also be expressed as a running annual average. Haloacetic acids are a by-product of the disinfection process. HAA sampling was completed in 2023 with the results as follows:

Date Sampled	HAA Result Value (µg/L)	Running Annual Average (µg/L)	Exceedance
January 9/23	<5.3	5.3	No
April 11/23	<5.3	5.3	No
July 10/23	5.3	5.3	No
October 10/23	<5.3	5.3	No

The Scott Point DWS does not have significant levels of lead and so is currently under a reduced-sampling program. Under this sampling program, O. Reg 170 Schedule 15.1 requires sampling for lead every three years and lead-related parameters (pH and alkalinity) every year. PH and Alkalinity sampling was completed in 2023, below are the results.

Date Sampled	Location Type	Number of Samples	Parameter	Results
April 3, 2023	Distribution	1	pH	7.8
			Alkalinity (mg/L)	111
August 14, 2023	Distribution	1	pH	7.6
			Alkalinity (mg/L)	91

2.3. Operational Monitoring

Sodium hypochlorite is used for primary and secondary disinfection. The free chlorine residual is monitored continuously on the treated water and must be checked a minimum of twice per week in the distribution system.

As a target, the free chlorine residual should be above 0.20 mg/L. A distribution free chlorine level lower than 0.05 mg/L must be reported and corrective action taken.

Our internal sampling schedule exceeds the minimum requirements by having operations staff collect one distribution free chlorine residual every day.

Free Chlorine Residual	Number of Grab Samples	Range of Results (#-#)
Treated Water	Continuous monitoring	0.00 – 5.00
Distribution Water	365	0.42 – 1.47

Notes: Maintenance on site in June caused a minimum zero '0' chlorine to be recorded

O. Reg 170 Schedule 7 requires that turbidity in the raw water is tested at least once every month. Consistent turbidity results greater than 5 NTU could indicate surface water influence on the well.

Raw Water	Number of Grab Samples	Range of Results (#-#)
Turbidity	51	0.16 – 0.83

3. WATER QUANTITY

The following tables list the quantities and flow rates of the water supplied to the distribution system during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity specified in the system Municipal Drinking Water Licence. The rated capacity of the treatment system is 77.76 m³/day. There is no maximum flow rate specified for water supplied to the distribution system.

Month	Total Treated Flow (m3)	Average Daily Flow (m ³ /day)	% Average Day/Rated Capacity (m ³ /day)	Maximum Daily Flow (m ³ /day)	% Maximum Day/Rated Capacity (m ³ /day)
January	448	14	19%	17	22%
February	404	14	19%	17	22%
March	469	15	19%	18	24%
April	462	15	20%	18	24%
May	550	18	23%	27	35%
June	798	27	34%	38	49%
July	885	29	37%	39	50%
August	589	19	24%	31	40%
September	499	17	21%	24	31%
October	475	15	20%	27	34%
November	453	15	19%	23	29%
December	494	16	20%	24	30%
Annual	6,527	18	23%	39	50%

Month	Average Daily Flow Rate (L/s)	Maximum Daily Flow Rate (L/s)
January	0.17	1.47
February	0.17	2.58
March	0.18	2.57
April	0.18	2.58
May	0.21	2.56
June	0.31	2.56
July	0.33	2.50
August	0.22	1.85
September	0.19	2.44
October	0.18	2.50
November	0.18	2.50
December	0.18	2.20
Annual	0.21	2.58

4. ADVERSE WATER QUALITY INCIDENTS AND NON-COMPLIANCE FINDINGS

Any adverse results from microbiological samples, chemical samples or observations of operational conditions that indicate adverse water quality are reported to the Spills Action Centre (SAC) of the Ministry of the Environment, Conservation and Parks and the Medical Officer of Health (MOH). All adverse conditions are responded to immediately and corrective actions taken. There was one reportable incident in 2023 for Fluoride Adverse.

Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
April 13, 2023 AWQI# 161746	Fluoride above MAC limit of 1.5mg/L	1.72mg/L	Resampled and annual notification given to system users	April 17, 2023

The annual Ministry of the Environment, Conservation and Parks Inspection took place on December 19, 2023 for the period of December 8, 2022 to December 19, 2023. There were no non-compliance issues noted in the report.

O. Reg 170 Schedule 22 requires the municipality to identify any requirements of the Act, Regulations, Drinking Water Works Permit, Municipal Drinking Water Licence and any Order that the system failed to meet during the reporting period. There are four issues identified in 2023 in the table below.

Drinking Water Legislation	Requirements the System Failed to Meet	Duration	Corrective Actions
O. Reg 170/03, Schedule 6, section 5. (i)	The Continuous monitoring equipment must have a feature that ensures that no water is directed to users of water sampled by the equipment in the event that the equipment malfunctions or loses power. During low chlorine alarm events the pressure tanks still drained to the system after the high lift pump locked out.	Any low chlorine alarm	Installed a solenoid valve that automatically closes based on the low chlorine lockout value entered. The valve is located after the pressure tanks.
O. Reg. 170, Schedule 6, Section 10. 1. ii	The continuous monitoring equipment would not signal an alarm to call out to a location where a person is present. The telephone line did not call out during the monthly generator test. Alarm system not functioning	February 14, 2023	Bruce Telecom contacted to investigate, replaced corroded phone jack inside the building.
O. Reg. 170, Schedule 6, Section 10. 1. ii	The continuous monitoring equipment would not signal an alarm to call out to a location where a person is present. When power is out, telephone line goes down as well.	November 13, 27, 29	Bruce Telecom contacted. Aging and outdated equipment on their end. No backup power for telephone line. Added a heartbeat alarm for our SCADA so if signal is interrupted Win911 alarm system will notify staff.
O. Reg. 170, Schedule 6, Section 10. 1. ii	The continuous monitoring equipment would not signal an alarm to call out to a location where a person is present. When the power is out, the telephone line goes down as well.	December 12, 2023	Communication alarm from Win911 system notified staff of outage. Staff responded to site and monitored.